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ABSTRACT

The Children's Attitude toward Reading Test (CHART) is presented, as well as the first draft of a technical manual describing its use. The test booklet consists of 36 unsystematically ordered pictures. Each picture represents a reading situation (instructional, school recreational, home recreational, and outdoor recreational reading) that has undergone content validation. Directly beneath each picture are three empty boxes, color coded to aid the children in identifying their responses. Instructions are read aloud to 166 students in kindergarten through grade 2. Students are directed to look at each picture and respond according to whether the picture shows him/her something he/she would like to do, would not like to do, or is not sure about. The student's response is marked in the appropriate box under each picture. In addition, subjects' self-ratings of their own attitude toward reading, and teachers' ratings of their students' attitude toward reading are used to estimate the students' attitude toward reading. Response data were analyzed for each of the grades, as well as the composite, and included internal consistency reliability coefficients for each of the four reading situations. (Author/RL)

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CHART: Children's Attitude Toward Reading Test

Technical Manual (first draft)

by

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TM 810 034 (1 of 2)

Subjects

Two non-overlapping sets of subjects participated in the reliability and validity study. One set of 111 served as judges who determined the relevance of each item. The children in this set comprised the entire population of the kindergarten, first, and second grades in one suburban Atlanta elementary school. All but three of these judges were white. The judges ranged in age from 5 to 8 years old (see Table 1).

The second set of subjects consisted of the pupils to whom the instrument was administered in group format. Two elementary school populations were represented, the entire population of the kindergarten, first, and second grades in one school, and 50 kindergarten, first, and second grade students from another school. A total of 166 subjects participated in the group administration of the instrument, 31 kindergartners, 59 first graders, and 76 second graders. These children were all white and ranged in age from 5 to 8 years old (see Table 1).

Administration and Scoring

The test booklet consists of 36 unsystematically ordered pictures, each printed on a separate page. Directly beneath each picture are three empty boxes. Instructions were written and read aloud, directing the subject to look at each picture and decide whether the picture showed him/her something he/she would like to do, something that he/she wouldn't like to do, or something that he/she was not sure about, marking the appropriate box under each picture. The boxes are color coded to aid in the identification. The coding is red, yellow, and green, corresponding to "dislike", "unsure", and "like" respectively.

Table 1

Numbers of Judges and Subjects Classified by Age, Sex, and Grade

(Judges)

	Male					Female				
Age	5	6	7	8	Total	5	6	7	8	Total
Grade										
Kindergarten	5	4			9	3	4			7
First Grade		18	13	1	32		17	8	1	26
Second Grade			16	9	25			6	6	12
TOTAL	5	22	29	10	66	3	21	14	7	45

(Subjects)

Age	5	6	7	8	Total	5	6	7	8	Total
Grade										
Kindergarten	6	11			17	7	6	1		14
First Grade		12	15	1	28		16	15		31
Second Grade			15	26	41			21	14	35
TOTAL	6	23	30	29	86	7	22	37	14	80

The final form of the scale was administered to the subjects in the second and third schools as described above. Data were collected in May, 1975. The subjects were tested in their own classrooms, with the teachers absent during the administration. Each class was tested as an intact group, with group size ranging from 10-25 children. The time period needed for the administration varied from approximately 15 minutes in the second grades to approximately 20 minutes in the kindergartens. In addition to responding to the 36 photographs, each subject placed himself/herself in one of three attitude-toward-reading groups: "like reading a lot"; "like reading a little"; and "not like reading at all". Also, the classroom teachers divided their children into the same attitude-toward-reading groups. The teachers were asked to use five criteria (see discussion of Criterion-Related Validity below) when establishing the groups. In this way, data relevant to two criteria were collected -- students' ratings of their own attitude, and teachers' ratings of their students' attitude.

The scoring method is as follows: Negative responses are scored 1; neutral responses are scored 2; and positive responses are scored 3. These scores were chosen over a 0, 1, 2 scheme so that any computer program subsequently used with the data would not have the problem of discriminating between blanks and zeros. If subjects respond to all of the items, total scores can range from 36 to 108. For children who responded to more than 30 but less than 36 items, a neutral score of 2 was assigned to each omission and that child's total score was included in the data analysis as the instrument was probably inappropriate for that child. The criterion of 30 responses was determined arbitrarily.

Sampling Procedures - Items

Discussions with reading experts resulted in the enumeration of 48 different situations which could be represented photographically as stimuli for the attitude scale. Once taken and printed these 48 pictures were randomly divided into six sets, each containing eight pictures. Each judge was presented with one set of pictures and asked whether each picture in the set represented a reading situation. In this way, content validation for the set of pictures to be included in the final (group) form of the scale was assured (see the discussion of Content Validity). Items which the judges considered not to represent a reading situation were deleted. Twelve such items were deleted as less than 67% of the judges agreed that the pictures represented reading situations. The remaining 36 pictures, which at least 67% of the judges agreed represented situations, were offset printed, unsystematically ordered, and bound in a booklet for group administration. Table 2 presents the judges' ratings given to both the pictures which were accepted for and deleted from the final form of the instrument. Of the 48 photographic stimuli described in Table 2, the first 36 correspond to those photographs which are included in the current form of the instrument. Stimuli 37 to 48 represent those photographs rejected by the judges. Each judge was presented with a single set of pictures and asked to sort them into three piles, corresponding to positive, neutral, and negative attitudes. The sets were randomly assigned to the children who served as judges. After an individual child viewed the set of pictures, the set was shuffled so as to change the order of the pictures for the next judge who viewed the set. In this way, each picture was seen by no less than 16 and no more than 22 judges. While this sorting procedure occurred, verbal reactions to the pictures were elicited and recorded. A standard procedure was used when giving directions for these two activities. The directions for the sorting, as well as the directions for the administration of the instrument, were

Table 2

Percentage of Acceptance of 48 Photographic Stimuli by Young Children

Stimulus Number	Accepted	Rejected	% Acceptance	Stimulus Number	Accepted	Rejected	% Acceptance
1	13	5	72	21	17	5	77
2	12	6	67	22	18	0	100
3	18	0	100	23	17	1	94
4	17	1	94	24	20	2	94
5	18	0	100	25	22	0	100
6	18	0	100	26	18	4	82
7	13	3	81	27	16	0	100
8	16	3	84	28	12	6	67
9	16	3	84	29	22	0	100
10	13	6	68	30	16	6	73
11	12	4	75	31	17	1	94
12	18	1	95	32	11	5	69
13	17	1	94	33	12	6	67
14	16	2	89	34	19	0	100
15	18	0	100	35	12	6	67
16	22	0	100	36	14	2	88
17	17	1	94	37	4	12	25
18	20	2	91	38	4	14	22
19	15	3	83	39	6	12	33
20	13	5	72	40	5	14	26

Table 2 Continued

Percentage of Acceptance of 48 Photographic Stimuli by Young Children

Stimulus Number	Accepted	Rejected	% Acceptance	Stimulus Number	Accepted	Rejected	% Acceptance
41	6	12	33	45	4	14	22
42	5	13	28	46	3	16	16
43	6	13	32	47	0	18	00
44	0	16	00	48	5	11	31

written and checked with early childhood reading experts to insure clarity and appropriateness for young children. Care was taken to avoid terms or concepts too difficult for young children to comprehend. The information concerning the reactions to the photographs served to validate the judges' decisions that, indeed, the pictures were about reading. In addition, this information was intended to provide a definition for reading relevant to the population in question, i.e., young children.

Test Statistics

Data were collected from the set of 166 subjects in May, 1975, with testing occurring in the children's own classrooms. Their teachers were absent during the administration. The children were tested as intact classes, with the class sizes ranging from 10-25. The time required for the administration of the instrument varied from approximately 20 minutes in the kindergarten to approximately 15 minutes in the second grades.

Total scores can range from a low of 36 to a high of 108, if subjects respond to every item. Based on the criterion established for including a subject if that subject responds to at least 30 of the 36 stimuli, 3 kindergartners were eliminated from the data analysis leaving a total of 28 kindergartners and a total of 163 subjects for the composite. In addition to identifying the high and low scores, Table 3 presents the test mean and standard deviation, for each of the grades and for the composite.

Table 4 presents the quartiles expressed as raw scores and standard scores for kindergarten, first and second grades. Table 5 presents quartiles and deciles expressed as raw scores and standard scores for the

Table 3

Means, Standard Deviations, and Ranges by Grade Level and for the Composite

	Test Mean	Test S.D.	Low Score	High Score	Range
Grade					
Kindergarten (n=28)	78.36	17.31	38.00	108.00	70.00
First Grade (n=59)	84.29	10.66	58.00	107.00	49.00
Second Grade (n=76)	85.16	9.65	58.00	106.00	48.00
Composite (n=163)	83.68	11.92	38.00	108.00	70.00

Table 4

Quartiles Expressed as Raw and Standard Scores for Kindergarten, First Grade, and Second Grade

	Q_1		Q_2		Q_3	
	Raw Score	Standard Score	Raw Score	Standard Score	Raw Score	Standard Score
Kindergarten (n=28)	65.00	-.77	77.00	-.08	85.17	.39
First Grade (n=59)	75.19	-.85	83.75	-.05	93.13	.83
Second Grade (n=76)	79.50	-.59	84.75	-.04	91.00	.61

Table 5

Quartiles and Deciles Expressed as Raw and Standard Scores for Composite (n=163)

Quartile	Decile	Raw Score	Standard Score
	D_1	68.30	-1.29
	D_2	75.74	- .67
Q_1		76.67	- .59
	D_3	78.47	- .44
	D_4	81.68	- .16
Q_2	D_5	83.70	.00
	D_6	86.64	.25
	D_7	90.30	.56
Q_3		91.75	.68
	D_8	93.70	.84
	D_9	99.97	1.37

composite. As Table 4 indicates, a larger percentage of the second graders had raw scores closer to the median of the distribution than did either the kindergartners or the first graders.

The semi-interquartile range (Q) is a measure of the dispersion of the scores (Glass & Stanley, 1970). This value (Q) decreases from 10.09 for the kindergartners, to 8.97 for the first graders, to 5.75 for the second graders indicating increased homogeneity among the scores as you go from lower to higher grades.

In addition, these Tables (4 and 5) provide the beginnings of a set of normative data which is useful for future comparisons with new sets of subjects. Insofar as the composite distribution is concerned, indices of skewness and kurtosis were computed. The skewness index ranges from -3 to +3. The computed value for the composite was .01 close enough to zero to indicate a symmetrical distribution. The kurtosis index also uses a criterion of 3. If the index equals 3, the curve is mesokurtic, a value exceeding 3 indicates a leptokurtic curve, a value less than 3 indicates a platykurtic curve (Glass & Stanley, 1970, p. 92). The value of the index computed for the composite distribution was 2.98, indicating normal kurtosis.

Item Statistics

Tables 6, 7, 8, and 9 present for each item, the mean, standard deviation, and product-moment correlation with the total test score for the kindergarten, first grade, second grade, and the composite, respectively. In addition, for each item, the reliability index (Gulliksen, 1950) is presented. Also, each table lists the standard error of a Fisher-z (needed to test the significance of a correlation coefficient). As the four tables indicate, both the item-test correlations and the reliability indices are, on the whole,

Table 6

Item Mean, Standard Deviation, Product-Moment Correlation with Total Test Score, and Reliability Index for the Kindergarten (n=28)

Item	Item Mean	Item S.D.	Item-Test Correlation[a]	Reliability Index
1	2.54	.78	.42	.33
2	2.04	.78	.68	.53
3	2.29	.92	.52	.48
4	2.32	.76	.35	.27
5	2.11	.86	.60	.52
6	2.14	.92	.50	.46
7	2.14	.92	.44	.40
8	1.90	.90	.44	.40
9	2.36	.81	.53	.43
10	2.21	.82	.54	.44
11	2.11	.86	.50	.43
12	1.97	.87	.65	.56
13	2.25	.87	.55	.48
14	2.04	.91	.60	.54
15	2.29	.80	.69	.55
16	2.25	.91	.58	.53
17	2.00	.96	.45	.43
18	1.86	.92	.65	.59
19	2.21	.82	.53	.43
20	2.11	.86	.66	.57
21	2.21	.86	.35	.30
22	2.32	.85	.52	.44
23	2.07	.80	.67	.54
24	2.14	.92	.63	.58
25	2.32	.85	.62	.53
26	2.25	.87	.50	.44
27	2.46	.82	.47	.39
28	1.89	.94	.68	.64
29	2.43	.78	.75	.58
30	2.00	.85	.39	.33
31	2.25	.83	.63	.52
32	2.04	.78	.62	.48
33	2.46	.82	.58	.48
34	1.93	.92	.59	.54
35	2.29	.84	.67	.56
36	2.18	.89	.68	.61

a - Item-test correlation coefficients are inflated by overlap

b - Standard error of Fisher-z = 0.19

Table 7

Item Mean, Standard Deviation, Product-Moment Correlation with Total Test Score, and Reliability Index for the First Grade (n=59)

Item	Item Mean	Item S.D.	Item-Test Correlation[a]	Reliability Index
1	2.42	0.56	0.25	.14
2	2.34	0.73	0.44	.32
3	2.41	0.76	0.27	.21
4	2.39	0.76	0.39	.30
5	2.41	0.69	0.28	.19
6	2.46	0.74	0.34	.25
7	2.37	0.78	0.34	.26
8	2.61	0.64	0.38	.24
9	2.56	0.65	0.47	.30
10	1.61	0.71	0.31	.22
11	2.51	0.62	0.51	.32
12	2.36	0.80	0.40	.32
13	2.44	0.77	0.32	.24
14	2.24	0.79	0.37	.29
15	2.14	0.79	0.44	.35
16	2.49	0.72	0.56	.40
17	2.39	0.74	0.51	.38
18	1.95	0.79	0.10	.08
19	2.07	0.71	0.41	.29
20	2.49	0.72	0.50	.36
21	2.71	0.52	0.43	.22
22	2.61	0.61	0.21	.13
23	2.25	0.75	0.52	.39
24	2.22	0.72	0.47	.34
25	2.63	0.61	0.43	.26
26	2.14	0.81	0.61	.50
27	2.58	0.67	0.43	.29
28	1.98	0.57	0.52	.29
29	2.63	0.69	0.49	.34
30	2.05	0.65	0.26	.17
31	2.42	0.81	0.52	.42
32	2.32	0.72	0.67	.48
33	2.24	0.79	0.51	.40
34	2.22	0.78	0.39	.31
35	2.14	0.60	0.39	.23
36	2.51	0.65	0.64	.41

a - Item-test correlation coefficients are inflated by overlap

b - Standard error of Fisher-z = 0.13

Table 8

Item Mean, Standard Deviation, Product-Moment Correlation with Total Test Score, and Reliability Index for the Second Grade (n=76)

Item	Item Mean	Item S.D.	Item-Test Correlation[a]	Reliability Index
1	2.37	0.56	0.15	.08
2	2.28	0.74	0.26	.19
3	2.53	0.75	0.34	.26
4	2.53	0.72	0.29	.21
5	2.32	0.77	0.39	.30
6	2.62	0.69	0.34	.23
7	2.12	0.86	0.40	.34
8	2.54	0.72	0.22	.16
9	2.68	0.61	0.25	.15
10	1.97	0.84	0.32	.27
11	2.11	0.87	0.49	.42
12	2.41	0.71	0.50	.36
13	2.40	0.75	0.33	.25
14	2.08	0.81	0.45	.36
15	2.59	0.63	0.14	.09
16	2.46	0.75	0.33	.25
17	2.16	0.80	0.42	.33
18	2.28	0.77	0.25	.19
19	2.07	0.66	0.38	.25
20	2.51	0.70	0.34	.24
21	2.70	0.59	0.31	.18
22	2.57	0.66	0.31	.20
23	2.29	0.67	0.54	.36
24	2.40	0.80	0.36	.29
25	2.83	0.47	0.38	.18
26	2.22	0.81	0.45	.36
27	2.71	0.56	0.46	.26
28	1.96	0.60	0.34	.20
29	2.59	0.67	0.52	.35
30	2.16	0.65	0.32	.21
31	2.47	0.73	0.37	.27
32	2.24	0.72	0.53	.38
33	2.11	0.82	0.56	.46
34	2.37	0.74	0.51	.38
35	2.21	0.68	0.48	.32
36	2.34	0.74	0.45	.33

a - Item-test correlation coefficients are inflated by overlap

b - Standard error of Fisher-z = 0.11

Table 9

Item Mean, Standard Deviation, Product-Moment Correlation with Total Test Score, and Reliability Index for the Composite (n=163)

Item	Item Mean	Item S.D.	Item-Test Correlation[a]	Reliability Index
1	2.42	.61	.24	.15
2	2.26	.75	.44	.33
3	2.44	.79	.38	.30
4	2.44	.74	.34	.25
5	2.31	.76	.42	.32
6	2.48	.77	.41	.32
7	2.22	.85	.37	.31
8	2.45	.77	.37	.28
9	2.58	.67	.42	.28
10	1.88	.82	.31	.26
11	2.25	.81	.47	.38
12	2.31	.79	.52	.41
13	2.39	.78	.39	.30
14	2.13	.82	.46	.38
15	2.38	.75	.39	.29
16	2.44	.78	.48	.37
17	2.22	.82	.46	.38
18	2.09	.82	.33	.27
19	2.09	.71	.40	.28
20	2.44	.75	.50	.38
21	2.62	.65	.39	.25
22	2.54	.69	.36	.25
23	2.24	.73	.57	.41
24	2.29	.80	.47	.37
25	2.67	.63	.51	.32
26	2.20	.82	.49	.40
27	2.62	.66	.46	.30
28	1.96	.66	.51	.34
29	2.58	.70	.57	.40
30	2.09	.69	.33	.23
31	2.42	.78	.49	.38
32	2.23	.74	.60	.44
33	2.22	.82	.48	.39
34	2.24	.81	.51	.41
35	2.20	.68	.48	.33
36	2.37	.74	.57	.42

a - Item-test correlation coefficients are inflated by overlap

b - Standard error of Fisher-z = 0.08

larger for the kindergarten than for the first and second grades and that the values for the first grade are, on the whole, larger than those for the second grade.

It must be noted that the correlation coefficients are inflated by overlap, i.e., in the calculation of the item-test correlation for a particular item, the responses to that item were not removed from the total scores. The computational procedures for the calculation of the reliability indices require that the item-test correlation used not be corrected for overlap. The item-test correlation indicates the relationship between responses to a particular item and the total test score. The reliability index (the product of the item standard deviation and the item-test correlation) indicates the contribution of the responses to that item to the total test variability. The sum of the reliability indices equals the standard deviation for the total test scores.

Reliability

Two separate estimates of score reliability were computed. First, an internal consistency reliability estimate was computed using Cronbach's Coefficient Alpha (Cronbach, 1951). This coefficient reflects the extent to which the items in the test are homogeneous. The magnitude of the coefficient also reflects the extent to which the total test variability is attributable to all common factors. As Table 10 indicates, the Alpha values are .94, .86, and .82 for the kindergarten, first, and second grades, respectively, although the standard error of measurement (s_{meas}) for each of the three grades are quite similar; 4.24, 4.02, and 4.12 for kindergarten, first, and second grades, respectively.

Table 10

Internal Consistency and Test-Retest (1-week interval) Reliability Coefficients for the Kindergarten, the First Grade, the Second Grade, and the Composite

Grade	n	Coefficient Alpha	s_{meas}	Test - Retest	s^{c}_{meas}
Kindergarten	28	.94	4.24	.65[a]	9.49
First Grade	59	.86	4.02	.78	6.20
Second Grade	76	.82	4.12	.79	6.09
Composite	163	.88	4.13	.75[b]	7.13

a - This coefficient was computed with 27 subjects as one kindergartner was absent for the retest.

b - This coefficient was computed with 162 subjects as one kindergartner was absent for the retest.

c - Computed using the standard deviation of the retest.

Also, a test-retest reliability coefficient was computed as an estimate of the stability of the scores obtained using the instrument. For both administrations of the instrument, the directions and procedures were identical. The time interval was one week. The test-retest reliability coefficients are .65, .78, and .79, with corresponding s_{meas} 9.49, 6.20, and 6.09 for the kindergarten, first, and second grades, respectively. When computing the s_{meas}, the standard deviation of the retest was used. Since stability of the scores was at issue, the variance associated with the 1-week interval and the retest seemed appropriate to use. By chance, the value of the standard deviation was larger in all cases except for the kindergarten, and thereby yielding a conservative estimate for the First Grade, Second Grade, and Composite, respectively. An inference has to be made from the stability of the scores to the stability of the underlying trait (or state) represented by those scores (Cattell, 1966). Table 10 lists the two reliability estimates and the s_{meas} for both the composite and for each grade. Table 11 presents the mean, standard deviation, and range for both the first and second administrations of the instrument for the three grades and for the composite. It should be noted that one kindergarten subject was absent for the retest, thereby reducing the number of kindergartners tested to 27, and the composite to 162.

Validity

Content Validity

Two separate checks on the content validity of the instrument were made. The first, consultation with reading experts, is directly related to the nature and substance of the instrument itself. As mentioned above, discussions with reading experts resulted in a compilation of the list of photographs to be included. In this way, each photograph represents both

Table 11

Means, Standard Deviations, and Ranges for the Test and Retest Distributions

	Mean	S.D.	Low Score	High Score	Range
Kindergarten (n=27)					
Test[a]	77.41	17.22	38.00	108.00	70.00
Retest	73.70	16.04	41.00	108.00	67.00
First Grade (n=59)					
Test	84.29	10.75	58.00	107.00	49.00
Retest	83.41	13.21	58.00	108.00	50.00
Second Grade (n=76)					
Test	85.16	9.71	58.00	106.00	48.00
Retest	84.97	13.30	54.00	108.00	54.00
Composite (n=162)					
Test	83.55	11.88	38.00	108.00	70.00
Retest	82.52	14.25	41.00	108.00	67.00

a - These values are different from those presented in Table 1. Since one kindergarten child was absent for the "retest", that child's "test" score was not included in the computation.

a situation which is directly related to the reading process and one which is considered appropriate for eliciting an affective response regarding reading.

The second procedure provides a check on the first. The judges indicated, for each picture viewed, whether or not the situation depicted in the photograph could be construed to be a reading situation. Using this as a criterion for deleting irrelevant items, 12 of the initial items were deleted, leaving the final form of the instrument containing 36 items.

In addition, it was anticipated that those pictures remaining in the final form of the scale would provide a validated definition for reading, one which young children consider appropriate. In this way, the definition for reading would not be presented on an a priori basis, but would reflect the impressions of the children being evaluated. The value of such a definition is apparent. The information presented to the teacher identifies, generally speaking, how a child views the reading process and its various dimensions. Particularly in those cases where a child demonstrates a negative attitude toward reading, a more detailed analysis may provide the teacher with a key that can unlock the door to the joy of reading. Knowing a child's preferences can guide the formulation of a remedial program such that positive reinforcement and carryover occur in dimensions of reading which carried a negative connotation for that child. This information has diagnostic value, particularly in planning a remedial program for a child with a negative attitude toward reading.

Criterion-Related Validity

Two independent estimates of the criterion-related validity of the instrument were computed. Each of the subjects placed himself/herself in one of three attitude-toward-reading groups -- low, middle, or high, corresponding to not liking reading at all, liking reading a little, and liking reading a lot. In addition, each classroom teacher placed each of her children in one of the same three attitude-toward-reading groups. When establishing these groups, the teachers were asked to use the following criteria:

(1) the child initiates reading (or reading related) activities independently;

(2) the child participates actively in library sessions -- browsing, selecting, and reading (or looking at) books;

(3) the child chooses reading (or reading related) activities over toys and games during free-time sessions;

(4) the child asks to be read to and/or listens attentively when read to;

(5) when interrupted during a reading (or reading related) activity, the child attempts to complete the task if given the opportunity.

This list of criteria is the result of the consultations with reading experts. These statements contained within parentheses refer to the non-reading child, whereas the others pertain to a child who is reading. The estimates of the criterion-related validity were computed by correlating the pupils' self-ratings of their attitude toward reading and the teachers' ratings of their students' attitude toward reading with the scores obtained on the attitude scale.

Table 12 presents the correlations between the total test scores and the two criteria, including the intercorrelations between the two criteria for the composite and for each of the grades. Inspection of this table indicates that the correlations for the students' self-ratings are .32, .37, and .40 for the kindergarten, first, and second grades, respectively, while correlation of the teachers' ratings are .05, -.03, and -.06 for the same three grades respectively, a decided advantage going to the students' self-ratings. In addition, Table 13 presents the correlation of each item with each of the two criteria. Choosing items with high correlations with the students' self-ratings will indicate those situations which the students associate with reading, thereby, by inference, identifying those situations included by children in a definition for reading.

Construct Validity

Construct validation deals with the logical and/or theoretical bases for the interpretation of certain relationships. With respect to this investigation, two general sets of relationships are of interest, i.e., what is the nature of attitude, and what is the nature of young children's attitudes toward reading.

Summers (1970, p. 2) has summarized the research findings relevant to the general characteristics of attitude. These are:

(1) an attitude is a predisposition to respond;
(2) an attitude is persistent over time;
(3) an attitude produces consistency of behavior;
(4) an attitude has direction.

Of these four characteristics, only the first is not observable. This fact probably accounts for the characterization commonly attributed to attitude that it is an inference from behavior, i.e., a latent trait,

Table 12

Correlations of Total Score with Students' Self-Ratings and Teachers' Ratings of Students for the Kindergarten, the First Grade, the Second Grade, and the Composite

	Total Score	Student Rating
Kindergarten (n=28)		
Student Rating	.32	
Teacher Rating	.05	-.16
First Grade (n=59)		
Student Rating	.37*	
Teacher Rating	-.03	.10
Second Grade (n=76)		
Student Rating	.40*	
Teacher Rating	-.06	.11
Composite (n=163)		
Student Rating	.38*	
Teacher Rating	-.01	.05

* $p < .01$

Table 13

Correlations of Test Items with Students' Self-Ratings of Attitude Toward Reading and Teachers' Ratings of Students' Attitude Toward Reading for Kindergarten, First Grade, Second Grade, and Composite

	Kindergarten		First Grade		Second Grade		Composite	
Item	Student Rating	Teacher Rating	Student Rating	Teacher Rating	Student Rating	Teacher Rating	Student Rating	Teacher Rating
1	.25	-.15	0.19	-0.06	-0.01	-0.15	.12	-.12
2	.18	.05	0.34	0.11	0.24	-0.02	.27	.04
3	.05	.08	0.08	0.14	0.12	0.07	.10	.10
4	.09	.14	0.02	0.00	0.17	0.00	.11	.03
5	.41	.23	0.04	-0.11	0.21	-0.11	.21	-.03
6	-.16	.01	0.27	0.22	0.14	-0.20	.13	.00
7	.28	.40	0.20	-0.17	0.32	-0.13	.26	-.04
8	.00	.03	0.02	0.04	-0.09	-0.06	.01	.00
9	.04	.01	-0.01	0.03	-0.11	-0.01	-.01	.02
10	.22	.16	0.08	-0.03	0.22	0.09	.15	.06
11	.35	.18	0.36	0.10	0.31	-0.06	.31	-.03
12	.25	.11	0.23	-0.10	0.24	0.04	.26	.01
13	.17	.04	0.06	0.13	-0.04	0.04	.05	.07
14	.28	-.06	-0.03	-0.18	0.16	-0.27	.12	-.20
15	.14	.26	0.09	-0.05	0.04	0.10	.10	.08
16	.16	-.06	0.25	-0.08	-0.09	-0.09	.10	.07
17	.12	.41	-0.08	-0.19	0.20	-0.05	.09	.01
18	.42	-.11	0.15	-0.13	0.23	0.14	.27	.01
19	.15	.10	0.20	0.07	0.04	0.04	.12	.06
20	.41	-.34	0.25	-0.01	-0.06	0.13	.19	-.01
21	-.06	.20	0.07	-0.01	0.06	-0.11	.06	.01
22	.08	-.24	0.09	-0.11	-0.03	0.06	.06	-.06
23	.13	.26	0.32	0.05	0.33	0.13	.28	.13
24	.09	-.23	0.11	0.04	0.25	-0.07	.17	-.06
25	.01	.18	0.11	0.22	0.39	-0.05	.20	.12
26	.24	.14	0.31	-0.05	0.24	-0.10	.26	-.04
27	-.03	-.34	0.11	-0.02	0.07	0.00	.08	-.08
28	.37	.17	0.05	0.13	0.19	0.14	.20	.14
29	.55	-.12	0.31	0.30	0.22	0.04	.34	.10
30	.07	.11	0.15	-0.34	0.15	0.05	.14	-.07
31	.25	-.07	0.13	0.07	0.36	0.07	.26	.05
32	.10	-.24	0.33	0.15	0.09	-0.05	.19	-.01
33	.19	-.23	0.11	-0.09	0.09	-0.15	.09	-.15
34	.27	-.27	0.19	0.00	0.25	-0.06	.25	-.07
35	.27	.14	0.12	-0.15	0.32	0.09	.23	.03
36	.05	-.04	0.35	-0.13	0.11	-0.15	.17	-.12

rather than the behavior itself (Green, 1967; Summers, 1970). Given the unobservable nature of the latent trait, "proof"of its existence is not possible. Rather, certain relationships between the observable behaviors and the latent trait must be hypothesized and explored in light of the data collected and analyzed.

A fundamental issue is how young children conceive of reading. One assumption implicit in the construction of the instrument is that different children conceive of reading differently. Actually, the assumption applies to the reading experts as well as to the children. Evidence supporting this assumption exists in the fact that when the experts were consulted, four apparently distinct dimensions could be recognized. These dimensions characterized the 48 pictures which were presented to the judges for evaluation. Further corroborative evidence was provided by the judges who, while eliminating some pictures, managed to include photographs which still quite clearly represented the four dimensions which were interpreted as the definition for reading. These four dimensions are: Instructional reading, school recreational reading, home recreational reading, and outdoor recreational reading. The approach to defining reading exemplified by the instrument is that reading cannot be separated from the context in which it occurs. For this reason, it is not considered a contradiction that the judges were asked to select pictures that were "about reading" while instruction for the subjects' self-ratings askedwhether or not each liked reading "a little, a lot, or not at all." In this way, young children's preferences for particular reading siutations were identified, concentrating attention upon the context in which the reading (or reading related) activity occurred. It will remain for future investigations to identify within each of the four settings, the preferences of young children regarding instructional or curricular formats or materials. A condition necessary to support the usefullness of these dimensions is a high internal consistency reliability coefficient. A high value would support the homogeneity of the content for each of the four dimensions. Insofar as the data from the investigation are concerned, internal consistency reliability coefficients were computed for each of the four reading situations for each of the grades and the composite.

While Summers (1970, p. 2) has synthesized the research findings and enumerated four general characteristics of attitudes, nevertheless, certain qualifiers need to be added regarding the nature of attitude in young children.

(1) "An attitude is a predisposition to respond (Summers, 1970, p. 2)." While it must be recognized that this is the unobservable aspect of attitude, i.e., the latent trait, it is not unreasonable to expect that given the nature of the population in question (young children) and the nature of the object of the attitude (reading), that the subjects will respond honestly and not fake responses, i.e., that the responses are "true" measures of young children's attitude toward reading.

(2) "An attitude is persistent over time (Summers, 1970, p.2)." As has been indicated, an attitude is a trait which is internalized to the degree that it has an effect upon behavior (Krathwohl et al., 1964; Payne, 1974). However, the nature of this internalization does not preclude attitude from changing. But, what is the nature of the stability of the trait over time insofar as young children are concerned? Developmental theorists would concur that from kindergarten through second grade, personality characteristics exhibit greater stability (Doll, 1953; Erikson, 1960; Maier, 1965). It will be expected that stability reliability coefficients increase in magnitude from kindergarten through second

grade. An inference is drawn from the stability of the score on the instrument to the stability of the underlying trait being estimated (Cattell, 1966).

(3) "An attitude produces consistency of behavior (Summers, 1970, p. 2)." While behavioral specimens, per se, were not collected, two independent measures of the subjects' attitude toward reading were collected: students' self-ratings of their own attitude toward reading; and teachers' ratings of their students' attitude toward reading. It was expected that both of these estimates would relate to estimates of attitude as determined by total scores on the instrument, but that for the consistency to be congruent, that the subjects' self-ratings would associate more positively with total scores than would the teachers' ratings.

(4) "An attitude has direction (Summers, 1970, p. 2)." As an estimate of the direction associated with young children's attitude toward reading, it is assumed that subjects who indicate that they like reading, i.e., place themselves in the "like reading a lot" group, will score higher on the instrument than subjects who placed themselves in the "not like reading at all" group. This also is reflected by the relationship between total test score and group membership.

Four dimensions were hypothesized as representing what young children would accept as part of the definition of reading. These four dimensions are: Instructional Reading, School Recreational Reading, Home Recreational Reading, and Outdoor Recreational Reading. Table 14 indicates the distribution of the 36 pictures among the four dimensions. Table 15 indicates both the internal consistency reliability coefficients and the corresponding s_{meas} for each of the four

Table 14

Distribution of 36 Photographs Among Four Dimensions of Reading

Item	Instructional Reading	School Recreational Reading	Home Recreational Reading	Outdoor Recreational Reading
1	X			
2	X			
3			X	
4		X		
5	X			
6		X		
7	X			
8			X	
9				X
10	X			
11	X			
12	X			
13		X		
14	X			
15			X	
16		X		
17	X			
18	X			
19	X			
20			X	
21				X
22		X		
23	X			
24			X	
25		X		
26	X			
27				X
28	X			
29			X	
30	X			
31		X		
32			X	
33	X			
34			X	
35	X			
36	X			

Table 15

Internal Consistency Reliability Coefficients for Four Dimensions of Reading for Kindergarten, First Grade, Second Grade, and the Composite

Grade	Instructional Reading (18 items)		School Recreational Reading (7 items)		Home Recreational Reading (9 items)		Outdoor Recreational Reading (3 items)	
	Alpha	s_{meas}	Alpha	s_{meas}	Alpha	s_{meas}	Alpha	s_{meas}
Kindergarten (n=28)	.89	3.06	.66	1.80	.85	2.02	.62	1.16
First Grade (n=59)	.79	2.72	.53	1.62	.72	1.92	.61	.87
Second Grade (n=76)	.79	2.86	.44	1.56	.67	1.96	.68	.78
Composite (n=163)	.82	2.87	.56	1.64	.75	2.00	.66	.87

dimensions for each of the three grades and for the composite. As indicated by these values, three of the four dimensions (Instructional Reading, Home Recreational Reading, and Outdoor Recreational Reading) have acceptable coefficients, indicating a relatively homogeneous for each of the four dimensions, thereby supporting the contention that young children's conception of attitude is, indeed, multidimensional. A reexamination of the item-subtest correlations for the School Recreational Reading dimension will undoubtedly provide the necessary guidance for the reevaluation of the distribution of the photographs among the four dimensions.

The persistence of the attitude over time has been described in the discussion regarding test-retest reliability. An inference is made from the stability of the scores obtained using the instrument to the stability of the underlying trait, attitude. Given the discussion presented concerning the stability of personality traits among kindergartners as compared with second graders, the test-retest reliability coefficients of .65, .78, and .79 for the kindergarten, first, and second grades, respectively, are acceptable. The expected stability of the trait is supported while the test-retest reliability coefficients are not so high as to preclude the possibility for attitude change.

Both the consistency of behavior and the directionality attributed to attitude are supported by the same data. As indicated in the discussion of criterion-related validity, two external criteria were used to estimate the subjects' attitude toward reading -- subjects' self-ratings of their own attitude toward reading, and teachers' ratings of their students' attitude toward reading. As an estimate of the consistency of behavior, it was expected that subjects who rated themselves "liking reading a lot" would score higher on the instrument than other subjects. As indicated by the data presented in Table 11, correlations between total score obtained using the instrument and subjects' self-ratings were .32, .37, and .40 for the kindergarten, first, and second grades, respectively, with the first and second grade correlation coefficients significant at the .01 level. While the correlations between teachers' ratings and subjects' total score showed less relationship, the apparent multidimensionality of the conception that young children attribute to reading, coupled with the fact that the five criteria presented to the teachers for use when establishing the three attitude toward reading groups reflected only behavioral aspects of school related reading, partially explain this phenomenon. The teachers could not possibly know the other two dimensions represented in the instrument, i.e., Home Recreational Reading and Outdoor Recreational Reading, and therefore could not have included this information when establishing the three attitude toward reading groups.

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Children's Attitude toward Reading Test

(CHART)

by

Paul S. Redelheim

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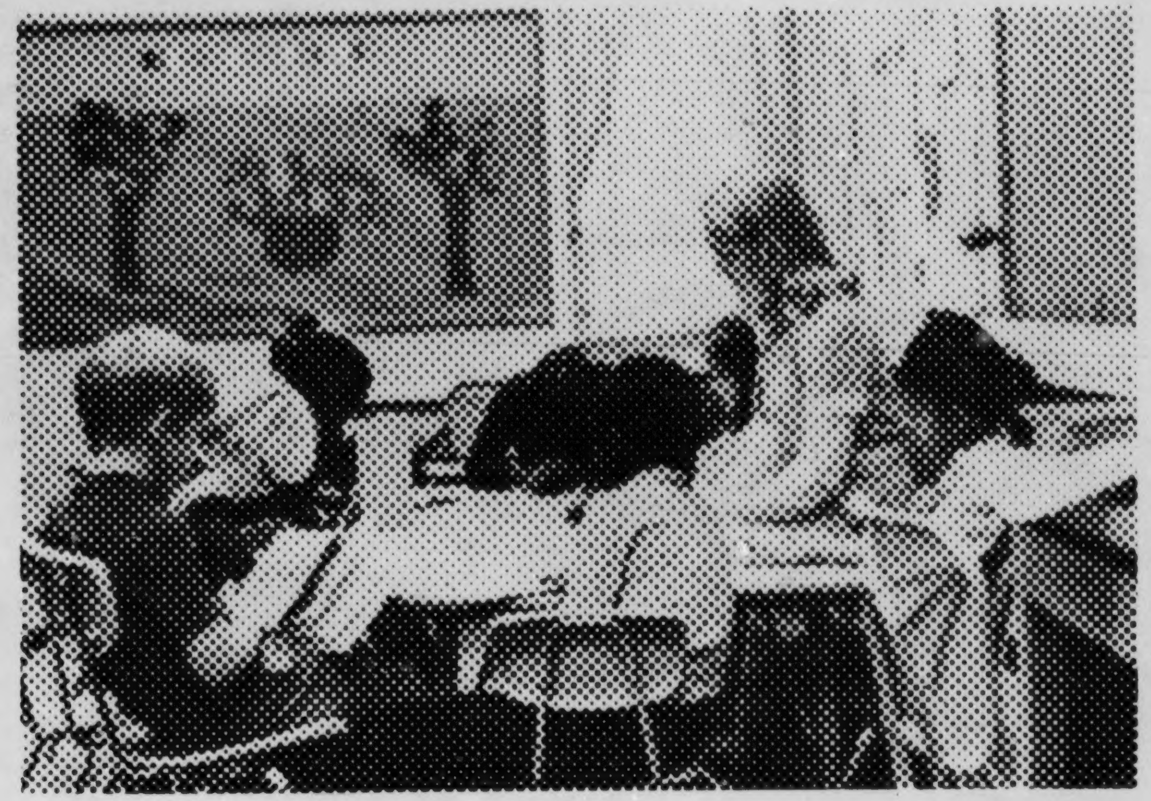

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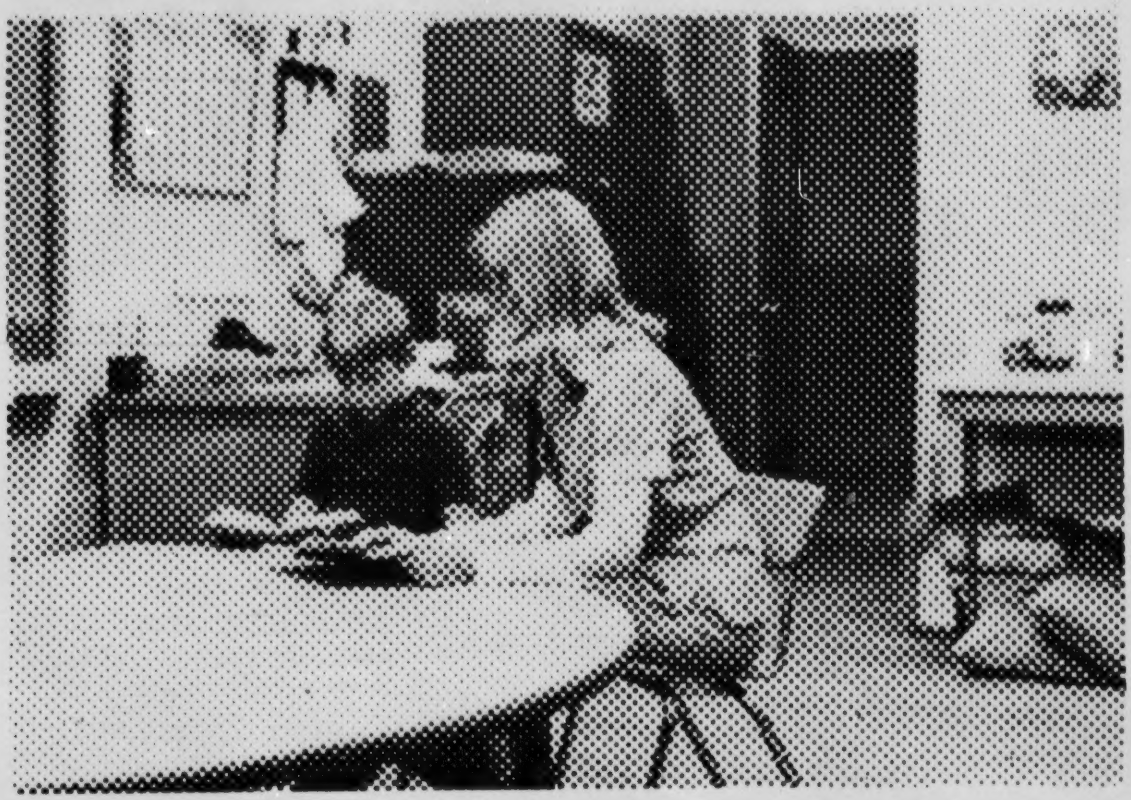

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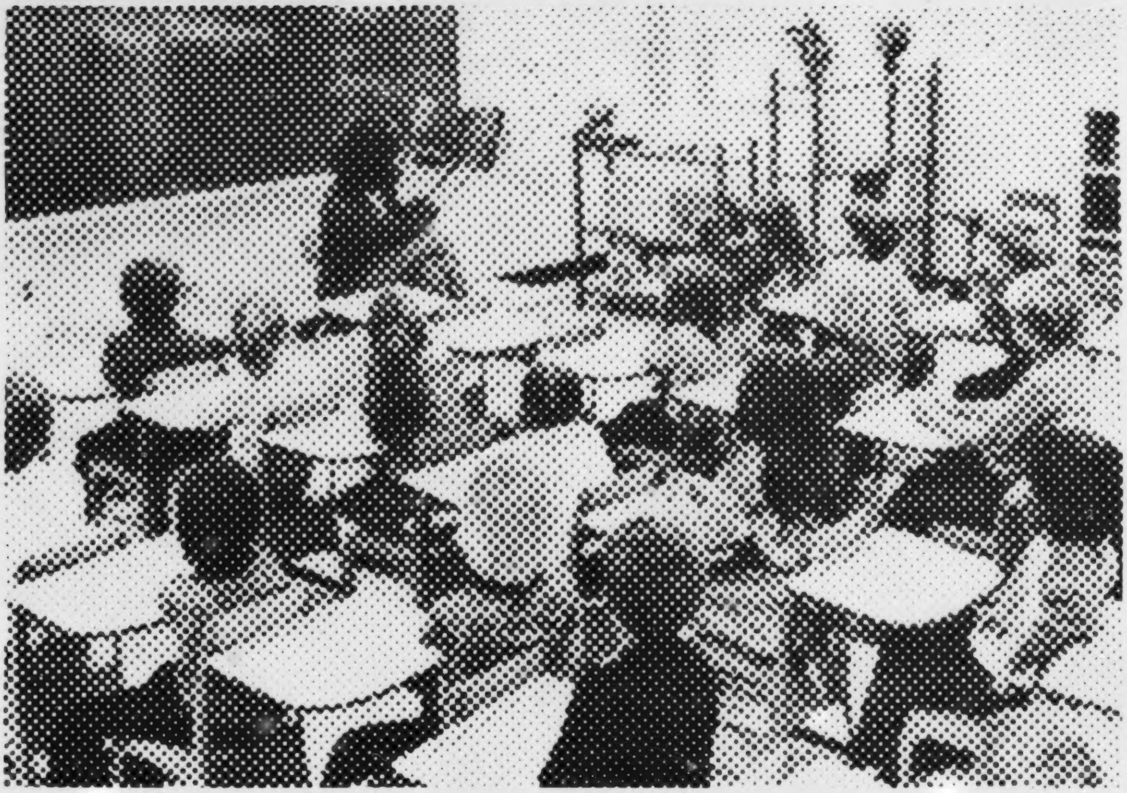

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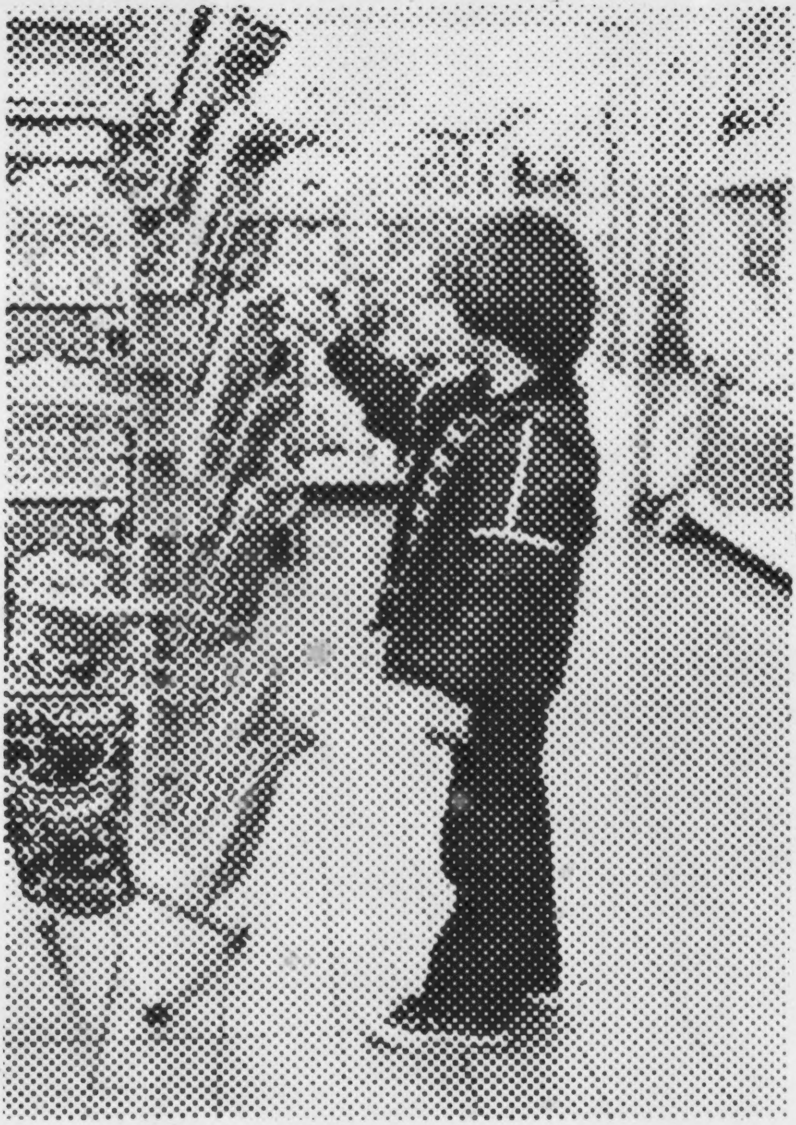

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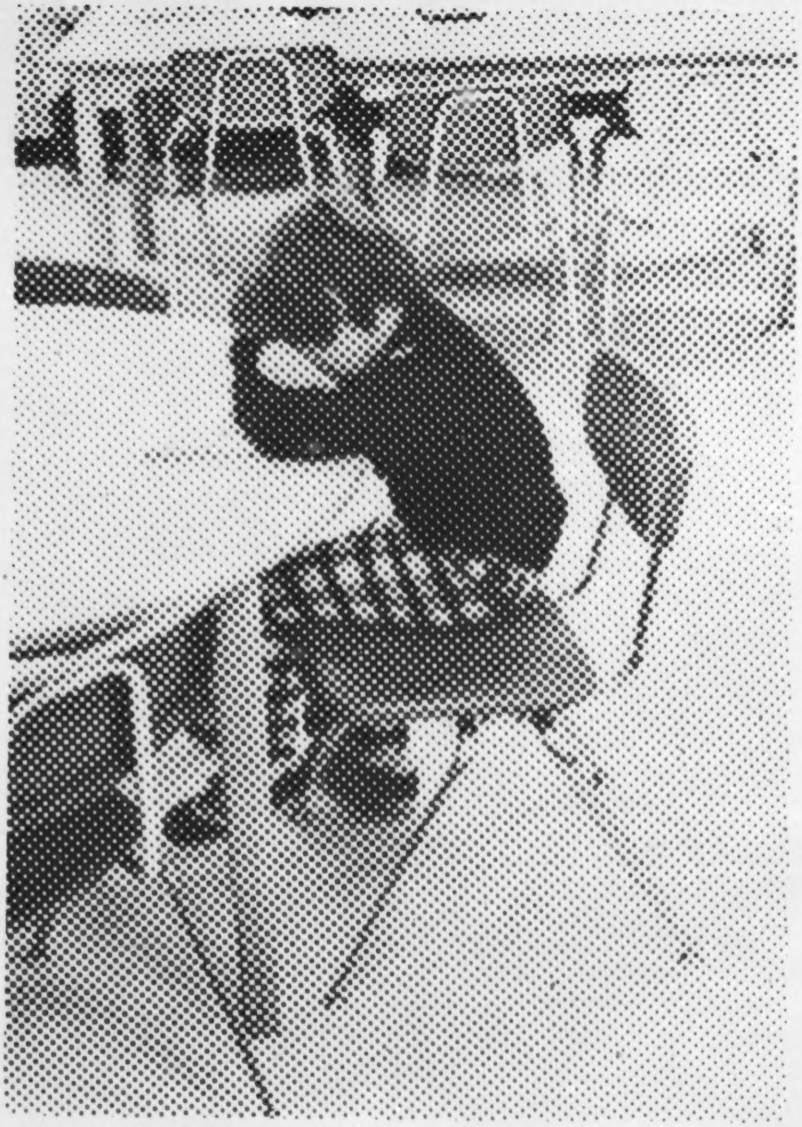

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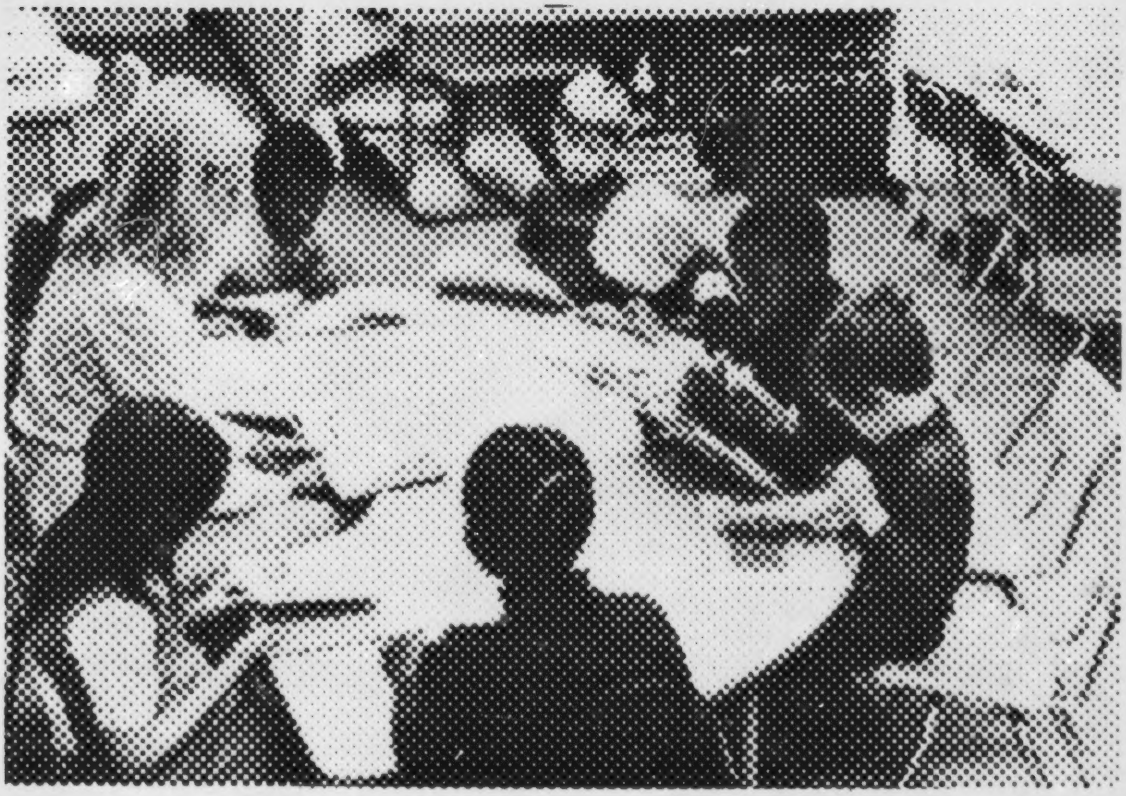

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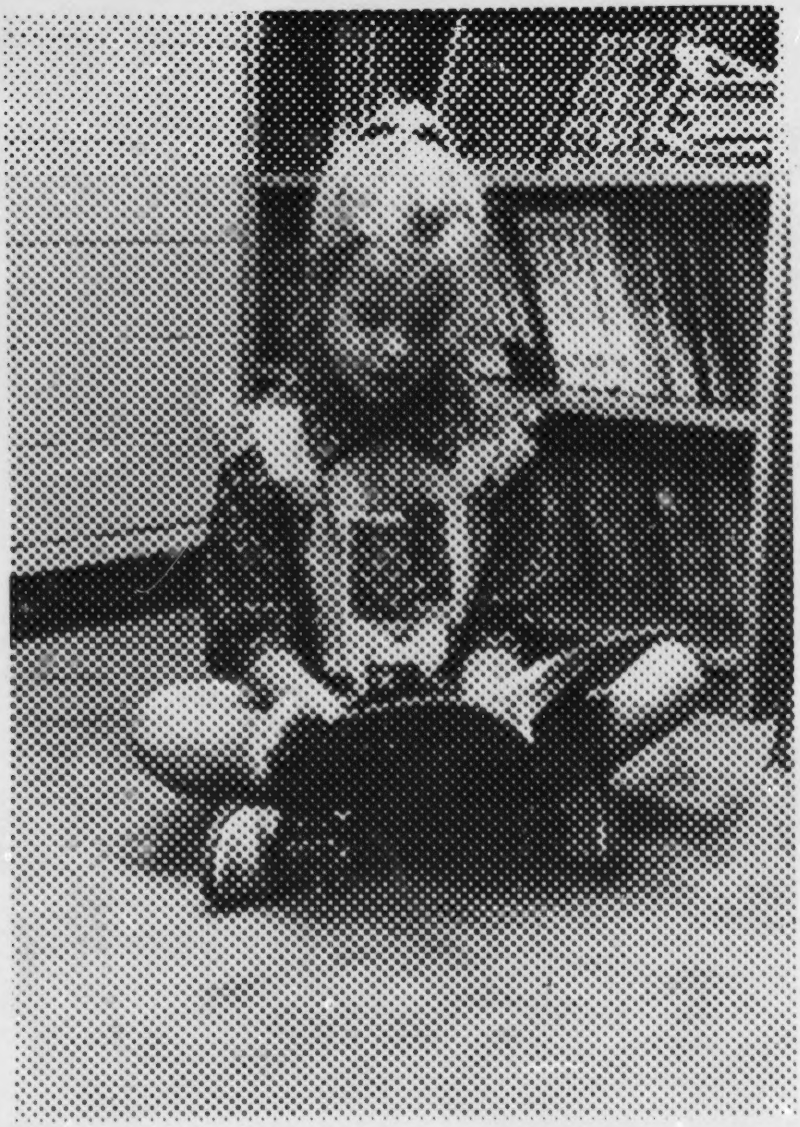

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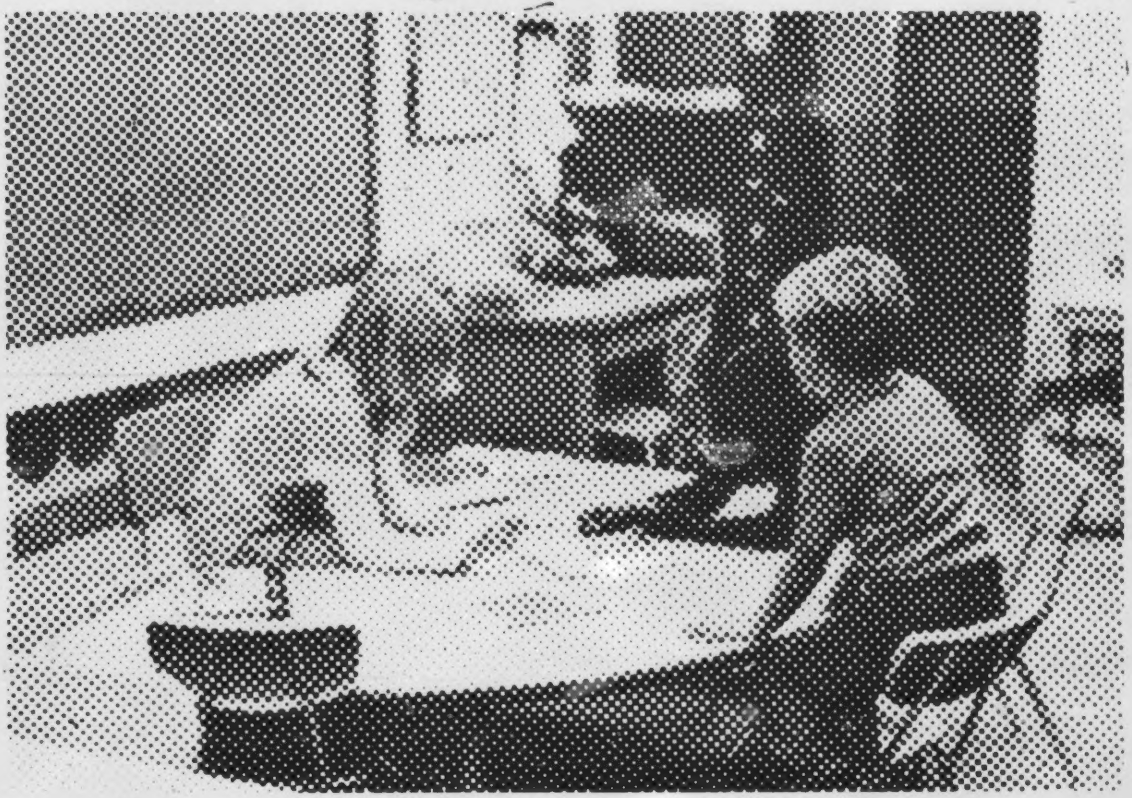

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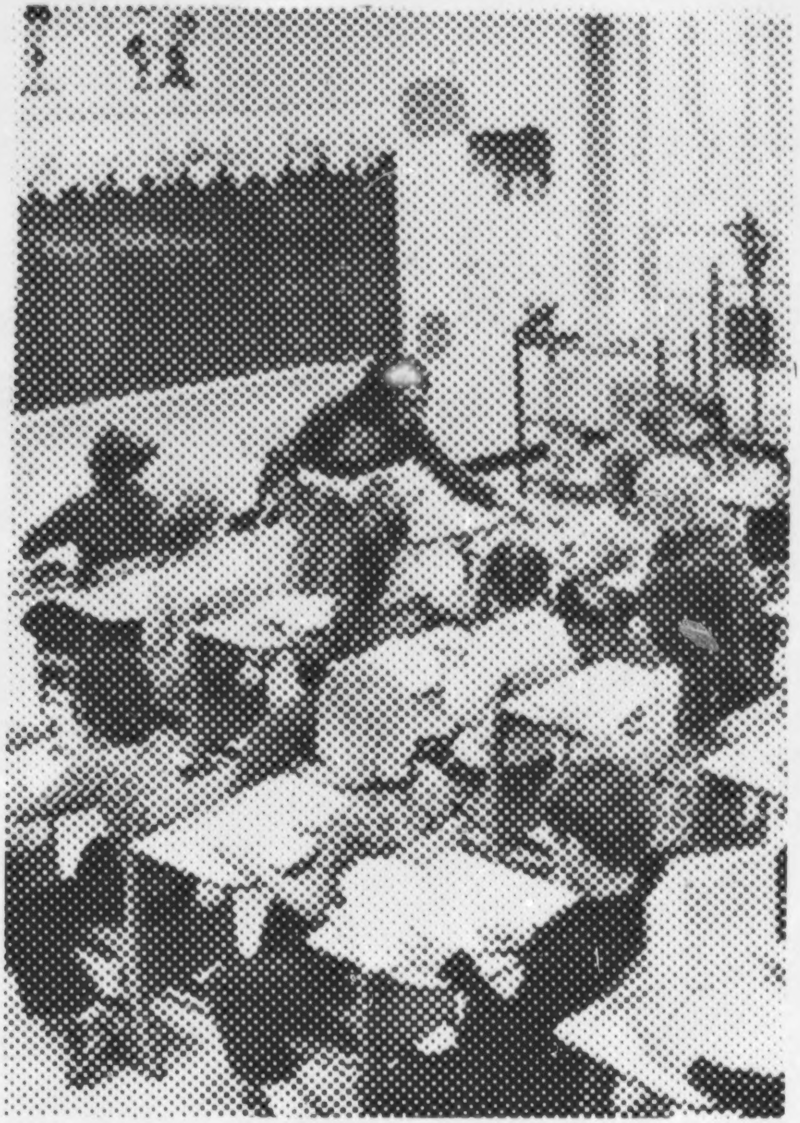

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